

REMARKS

Claims 1-15 have been withdrawn in response to the Examiner's restriction requirement. Claims 16 and 24- 28 have been amended. Claims 18, 22-23 and 34-35 have been cancelled. Claim 36 has been added. Thus, claims 16-17, 19-21, 24-33 and 36 are pending.

Restriction Requirement

The Examiner in a telephone conference on November 18, 2003 indicated that Applicant's invention was subject to a restriction requirement. Applicant has elected with traverse to pursue Invention Group II having originally filed claims 16-35.

Rejections Pursuant to 35 U.S.C. 103(a)

Claims 16-17, 19-21, 24-33 were rejected as being unpatentable over Stuempfle et al (United States Patent No. 6, 505, 100) in view of Davidson et al (United States Patent No. 6, 246, 693). In light of the amendments above, and for the reasons set forth below, those rejections are respectfully traversed.

Summary of Claimed Invention

The claimed invention addresses the display limitations encountered by display devices attempting to display messages received from multiple network devices. The claimed invention enables a display device to prioritize the messages received from multiple network devices, allows the display device to communicate with the network devices over an (IP) based network, and further enables the display device to accept detailed display characteristics for a message as part of the received message. Each network device is registered and a priority message queue for the registered device is created. Each priority message queue is assigned a priority by the display apparatus based on the identity of the network device. All messages received from a network device are placed in the priority message queue associated with the network device. Each message is further sorted within the priority message queue based on a priority level

encoded in the message by the sending device and identified by the display device. Messages are displayed based first on the priority between the respective message queues and then by priority within the message queue. The claimed invention also provides two-way communication between the network device and the display device that enables the retrieval of message status information by the network device.

Summary of Claim Amendments

Independent claim 16 (upon which claims 17, 19-21, 24-33 and new claim 36 are dependent) has been amended to incorporate the claim provisions of former claims 18, 22 and 23. Claim 16 has been amended to indicate that the display device registers multiple network devices and that a separate priority message queue is created on the display device for each registered network device. The claim amendments further indicate that each priority message queue has a priority level assigned to it based on the identity of the registered network device and that the queues hold messages from their respective associated devices. Claim 16 has also been amended to clarify that the display surface is not restricted to the automobile dashboard. Claims 24-28 have been amended to adjust dependencies. Claim 27 has been amended to clarify that the display device identifies a message priority level assigned by the network device. Claims 27 and 28 have also been grammatically amended. Claim 36 has been added to indicate that the display characteristics in the messages received by the display device may include a request to clear the display surface, a request to be persistent, a request to scroll the message, and a duration of time to display the message. Support for claim 36 may be found in the specification at page 9, lines 2-9.

Summary of Stuempfle et al

Stuempfle et al discusses an information processing and vehicle control system taking place in a distributed network. The information processing system includes a display . The display may be used to display data from other network components. The network components may register with a shared memory address. As noted by the Examiner, Stuempfle et al does not discuss the prioritizing of messages.

Summary of Davidson et al

Davidson et al discusses a simplex (one-way) communication system between a user and a host computer utilizing at least one repeater device. The system is directed towards a one way packet communication channel with re-transmissions to ensure that data sent in the simplex communication system arrives at its destination. Davidson et al discusses the retransmission of a received message at pre-determined intervals in a one way communication system where other techniques such as time-division multiplexing are unavailable. Davidson et al does discuss the use of a priority queue for sorting messages based on a priority assigned by the originator of the message and identified by the repeater (see col. 16, lines 45-57). Messages assigned to the priority queue are handled on a FIFO (First In First Out) basis(See Col. 16, lines 52-53 and col. 18, lines 47-50) at the repeater. Davidson et al does not discuss creation of priority message queues based on the identity of the network device or the use of a priority message queue by a display device.

Argument

The claimed invention claims an apparatus in two-way communication (duplex) with networked devices that works on a Response-Request basis (see detailed description throughout and Figures 4A-9B and the associated discussion). The claimed apparatus includes priority messaging queues created for each registered network device and prioritized on the basis of the identity of the sending network device. This addresses the problem identified in the background of Applicant's application of less important messages overwriting more important messages on a shared display (e.g. low windshield washing fluid overwriting low fuel warning). The claimed invention also includes the element of registering each network device prior to creating a priority message queue for the device.

Stuempfle et al in view of Davidson et al fails to disclose, teach or suggest all of the elements of Applicant's independent claim 16 (and its dependents). Stuempfle et al discusses a display surface connected to a network in a motor vehicle having multiple network components and the registration of those components with a shared memory space. For the other elements of

Applicant's claims, the Examiner relies upon Davidson et al. For the reasons set forth below, that reliance is misplaced.

Davidson et al fails to teach disclose or suggest the priority message queues as claimed in Applicant's invention. The priority message queue element, formerly appearing in claim 23 and now appearing in amended independent claim 16, requires that separate message queues be created for each registered network device, that the priority levels between the queues be assigned based on the identity of the network device, and that each message received from a network device be placed in a priority message queue associated with the network device. Davidson et al fails to disclose, teach or suggest any of these elements. The Examiner-cited sections of Davidson et al used in the rejection of former claim 23 discuss the use of a priority message queue operating on a FIFO basis. The priority between queues in Davidson et al is based upon a message priority of the messages in the queue that was determined by a sending device. The priority between queues is not based on the identity of the sending device. The failure to distinguish between sending network devices (by using a dedicated queue) is significant as it leaves open the possibility that a very important message (as rated by the sending device) for a non-critical device may overwrite a message of medium importance from a critical device. Applicant's claimed invention avoids this overwriting situation, Davidson et al does not.

The priority message queues in Davidson et al are also created by a repeater rather than on the display device as required by Applicant's claims. Davidson et al is discussing the forwarding of messages, not the end stage of processing the messages by the display device.

Applicant also notes that Davidson et al is directed towards the re-transmission of messages from an originating device so as to avoid collisions with other network traffic. The two objects of the invention listed in the Summary of the Invention section are instructive in this regard. The first object of the invention is stated as "to provide a simplex communication system that minimizes or avoids message collisions between multiple messages"(col. 2, line 65-67)[emphasis added]. The second object of the invention is stated as: "a simplex communication system that ensures that at least one copy of each message is successfully transmitted" (col. 3, line 1-3)[emphasis added]. All of Applicant's claims are directed towards a display apparatus in

a duplex communication system using Requests and Responses to communicate with, and provide information back to, registered network devices. The set of concerns involved in the transmission of data (e.g. message collisions) are significantly different between simplex and duplex systems. Accordingly, even if the combination of references cited by the Examiner taught or suggested all of the elements of Applicant's claims (a proposition Applicant strongly rejects as the combination fails to disclose Applicant's invention), there would have been no motivation to combine the references in a manner covering Applicant's claims. Stuempfle et al does not discuss priority message queues. Stuempfle et al does not contain motivation suggesting its combination with a elements of the simplex communication system using (a different type of) a priority messaging queue as an intermediate step in transmitting messages. Other than hindsight based on Applicant's application, there is/was no reason for those reasonably skilled in the art to have suggested the combination of references as obvious at the time of Applicant's invention.

Since all of Applicant's dependent claims are dependent on claims 16, and since the combination of references fails to disclose, teach or suggest all of the elements of the independent claim, Applicant respectfully requests the rejections directed to claims 17, 19-21, 24-33 be withdrawn and that those claims and new claim 36 be allowed.

Conclusion

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 12-0080, under Order No. SMQ-039 from which the undersigned is authorized to draw.

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Respectfully submitted,

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Attachments



Figure 5C

